Sanford Ponds Focus Area

Sanford, Maine

Description:

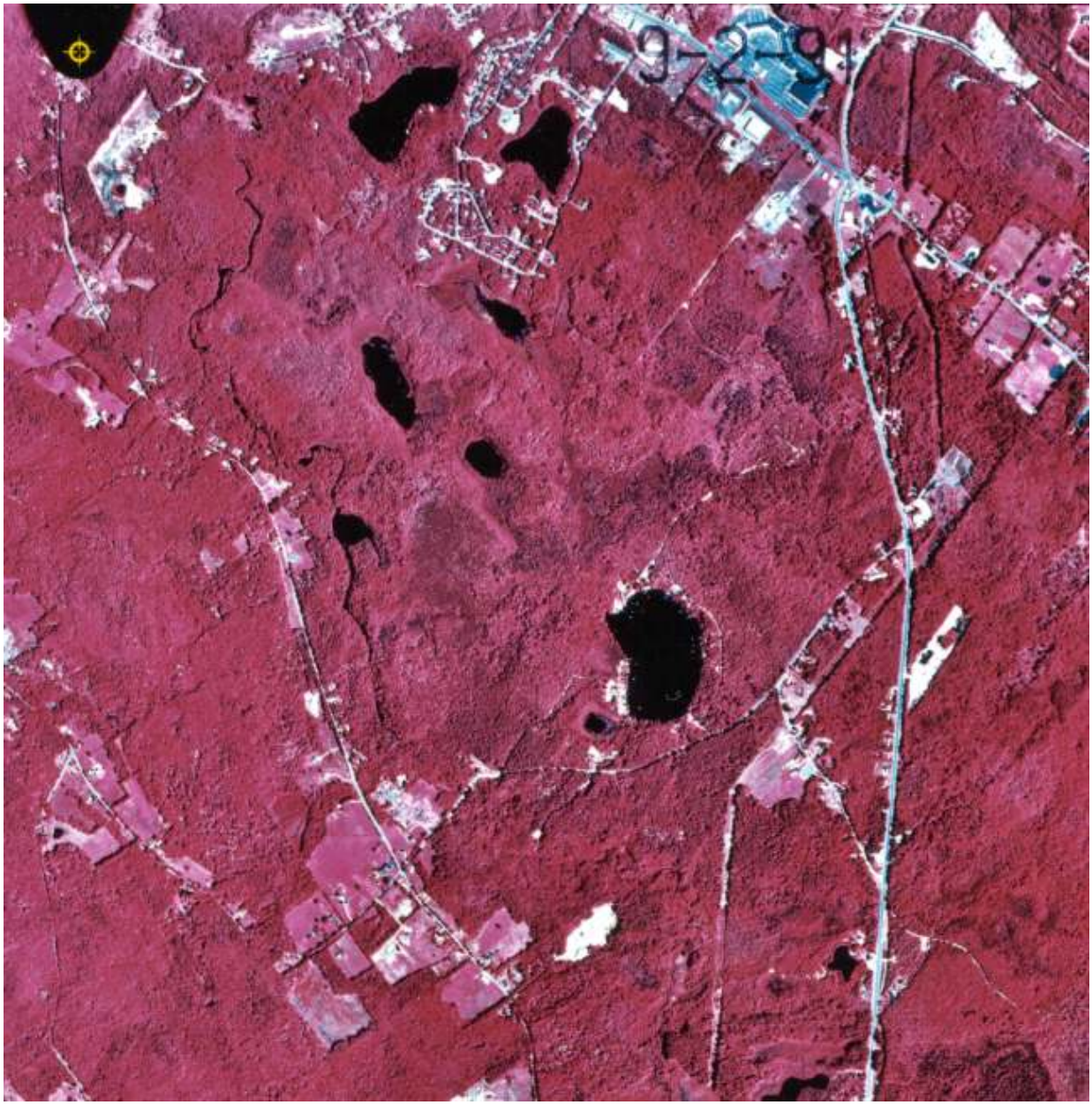
The Sanford Ponds Focus Area consists of a series of ponds and swamps located on a glacial meltwater formation of kame terraces and eskers. Low, steep sided, sand and gravel ridges border kettlehole depressions with ponds and swamps. The Great Works River runs through the focus area on the west side but shows only a minimal surface water connection to the pond area. Several of the ponds are surrounded by marshy margins of floating peat and have organic substrates. Other ponds have sand and gravel shores and mostly sandy to silty bottoms. The water in the ponds is mostly highly acidic and darkly stained with tannins from the peat. Forested swamps are interspersed with the ponds, and also occur along some stretches of the Great Works River.

Atlantic white cedar swamp

The focus area includes one of Maine's largest Atlantic white cedar swamps, a rare natural community type known from only a handful of locations in southern and midcoast Maine. This habitat type is characterized by a mostly closed-canopy of Atlantic white cedar that is mixed with black spruce or red maple. Openings within the swamp typically have mixtures of highbush blueberry, mountain holly, and winterberry, with patches of ferns and sedges. Dense mosses cover the hummock-and-hollow ground surface. Often the Atlantic white cedar forms a dense canopy that allows little light penetration and limits understory growth. Since Atlantic white

cedar seedlings are relatively intolerant of shade, some form of disturbance (e.g., fire, wind throw, or timber harvesting) may be required to regenerate Atlantic white cedar.

Uplands within the focus area are well drained and support mostly dry oak-pine forest with heath shrubs such as sheep laurel, low-bush blueberry, and huckleberry. There is an upland area to the south of Round Pond that supports a low quality example of a pitch pine barren natural community that is dominated by a somewhat closed canopy of relatively even aged pitch pine. A severe fire within the dry upland forest could eventually lead to greater abundance of pitch pine and an expansion of this natural community.



Color infrared Photo of Sanford Ponds focus area (1991)

Three other natural community types have been documented within the focus area including a good example of an Atlantic white cedar bog, a fair quality examples of both Leatherleaf boggy fen and Pipewort – water lobelia aquatic bed (sandy lake bottom) types. See descriptions for these types listed below.

Pipewort – water lobelia aquatic bed: This natural community type is characterized by shallow-water vegetation where most of the growth is underwater, with only the flowering portions of the plants above water. The most typical species, pipewort and water lobelia, grow as rosettes on the sandy to gravelly substrate; associated species may be rosette plants or growing in the water column. Water-shield, a floating plant, may be abundant in patches. Water-lilies and pickerelweed may be present at low cover. This type occurs in quiet shallow waters (< 1 m in depth) where the slope of the sandy/gravelly bottom is gentle.

Leatherleaf boggy fen: This type is characterized by peatland vegetation dominated by leatherleaf mixed with other low heath shrubs, mostly growing less than 1 m tall. Graminoid cover is usually less than 30%. Typical bog plants like pitcher plants, sundews, and small cranberry are scattered on the sphagnum substrate. Trees, if present at all, are < 15% total cover. This type is commonly found in bogs and nutrient-poor fens, usually in settings where groundwater contact is maintained. The substrate is sphagnum peat. Leatherleaf boggy fen is often a major constituent of "kettlehole bog" vegetation.

The focus area also includes several vernal pools. Vernal pools are ephemeral wetlands that typically fill with water from snow melt and spring run-off and often dry out over the course of the summer. They offer critical breeding habitat for some species of amphibians and invertebrates such as wood frogs, spotted and blue-spotted salamanders, and fairy shrimp. The seasonal nature of the temporary pools maintains a fishless environment conducive to the successful breeding of these animals. Vernal pools are also used as feeding and breeding habitat by many other animals such as spring peepers, gray tree frogs, and other common amphibians, as well as several rare species including Blanding's turtle (Endangered), spotted turtles (Threatened), wood turtles (Special Concern) and ringed bog haunter dragonflies (Endangered). The amphibians and aquatic invertebrates that are dependent on these ponds for survival are an important food resource for other forest dwellers such as turtles, snakes, birds, and small mammals. The vegetated condition of vernal pools varies from completely vegetated, usually with sedges, grasses, ferns, and scattered shrubs, to non-vegetated, with only dead leaves carpeting the pool bottom. Non-vegetated pools can be just as important for amphibians as those with plant cover.

The wetlands and uplands in this focus area support the state threatened spotted turtle and the state endangered Blanding's turtle. Spotted and Blanding's turtles are generally found only in the southern most part of the state where increasing development contributes to loss of habitat, habitat fragmentation, and an on-going loss of individuals to road kill. Spotted and Blanding's turtles are most frequently associated with complexes of small, acidic wetlands and vernal pools in large, intact forested landscapes. They also use small streams, shrub swamps, forested

swamps, wet meadows, and emergent marshes. Although these turtles spend most of their time in the water, they readily travel overland between wetlands during the spring and summer months. Upland habitats are also critical for basking, aestivating (a period of late summer inactivity), and nesting.

Spotted turtle

Ribbon snake

Spotted and Blanding's turtles have evolved relatively long adult life spans to offset the long time it takes to reach reproductive maturity and to offset high levels of nest mortality. Because of this unusual life history, spotted and Blanding's turtle populations occur at low densities, and thus populations are highly vulnerable to any human sources of adult mortality. Road mortality and collecting for pets, for example, can be extremely deleterious, as the attrition of just a few individuals every year can lead to the long-term decline and extinction of a local population. The secondary effects of human development – increased predator populations (e.g., dogs, raccoon, skunks), water pollution, filling of small wetlands, and blocking upland travel corridors (roads, rail beds, yards) – also limit populations. Spotted and Blanding's turtles are strictly protected from take (collecting, possession, or killing) by the Maine Endangered Species Act.

Ribbon snakes also occur in wetlands within the site. This species of special concern is typically found around the edges of wetland habitats such as marshy lake shores where amphibians are plentiful. These snakes will travel through water and occasionally use it to hide. Their range in Maine is limited to the southern part of the state.

A globally rare and state endangered invertebrate species, the Hessel's Hairstreak butterfly, is known from the Sanford Pond area. This butterfly is found exclusively near swamps and bogs where its host plant, Atlantic white cedar, is abundant, and the Massabesic forest hosts one of only three known populations of Hessel's Hairstreak in Maine. While probably never common on the northern end of its range, Hessel's Hairstreak is now vulnerable to extinction due to the incremental loss and fragmentation of remaining cedar swamps from logging and development activity in rapid growth areas of York County. Hessel's hairstreak is strictly protected from take (collecting, possession, or killing) by the Maine Endangered Species Act.

Three rare plants, smooth winterberry holly, yellow-eyed grass, and Atlantic white cedar, have all been documented growing within the focus area. Smooth winterberry holly occurs in southern Maine in swamps and wet thickets. Some populations, particularly in smaller wetlands are vulnerable to conversion of their habitat to residential or commercial use. Yellow-eyed grass occurs in southern Maine on peaty margins of bog ponds. All three of these plant species are at the north end of their range in southern Maine.

Rare Species Table for Sanford Ponds Focus Area:

Common Name	Scientific Name	Status	S-Rank	G-Rank
Natural Communities				
Atlantic White Cedar Bog	Atlantic White Cedar Bog	n/a	S1	G3G4
Atlantic White Cedar Swamp	Atlantic White Cedar Swamp	n/a	S2	G3
LeatherLeaf Boggy Fen	LeatherLeaf Boggy Fen	n/a	S4	Not assigned
Sandy Lake Bottom	Pipewort – Water Lobelia Aquatic Bed	n/a	S5	Not assigned
Pitch Pine – Scrub Oak Barrens	Pitch Pine – Scrub Oak Barrens	n/a	S1	G2
Rare Plants				
Atlantic White-Cedar	*Chamaecyparis thyoides*	SC	S2	G4
Smooth Winterberry Holly	*Ilex laevigata*	SC	S2	G5
Yellow-eyed Grass	*Xyris smalliana*	E	S1	G5
Rare Animals				
Hessel's Hairstreak Butterfly	*Callophrys hesseli*	E	S1	G3G4
Spotted Turtle	*Clemmys guttata*	T	S3	G5
Blanding's Turtle	*Emydoidea blandingii*	E	S2	G4
Ribbon snake	*Thamnophis sauritus*	SC	S3	G5

Conservation Considerations :

- The integrity of wetlands and the processes and life forms they support including rare plants and animals are dependent on the maintenance of the current hydrology and water quality of the site. Intensive timber harvesting, vegetation clearing, soil disturbance, new roads, and development on buffering uplands can result in greater runoff, sedimentation, and other non-point sources of pollution that can degrade the high quality natural systems that occur here.

- No activities should be permitted that could lead to the loss or degradation of turtle wetlands including filling, dredging, sedimentation, or changing of hydrology unless the activity is approved by MDIFW.
- A minimum 250-foot forested buffer zone should be maintained around target wetlands with known Blanding's turtle locations. All wetlands, regardless of size, within 1/4 mile of mapped spotted turtle locations should be considered potential habitat for this wide ranging species, and protected from direct impacts, and buffered by forested upland;
- Impervious surfaces such as yards, buildings, parking lots, and roads should be minimized in the upland landscape within 1/4 mile of turtle wetlands. Natural forest habitat should predominate the landscape. Intensive developments that concentrate human populations and road traffic within 1/4 mile of turtle wetlands should be avoided including subdivisions and service centers.
- Less pervasive is degradation from incidental uses related to the increasing residential development in the area. Upland buffers can also play a major role in protection here. Care needs to be taken that ORV's stay on existing trails and remain out of all wetlands when the ground is not frozen. Existing trails should be reviewed with particular recreation and access needs in mind, and trails closed if they run counter to protection needs. Fragmenting features should be minimized where possible.
- Low-intensity cutting (single tree or small group selection, firewood harvest) is likely compatible with sensitive features as long as operators avoid wetlands. Winter harvests are recommended to minimize impacts to rare plants, animals, and wetland systems. Close adherence to Best Management Practices for forestry activities near vernal pools (see Forestry Endangered and Threatened Species Guide) will ensure the protection of wetland habitats and the amphibian food source they supply.
- Conservation planning for upland features should include setting some areas aside from timber harvesting to allow for the development of some unmanaged forest ecosystems.
- No activities should be permitted that could lead to the loss or degradation of Atlantic white cedar swamps hosting Hessel's hairstreak including filling, ditching, polluting, or changes to the water level.
- A minimum 250 foot upland forested buffer zone should be maintained around Atlantic white cedar swamps hosting the Hessel's hairstreak. A buffer of ½ mile should be used for these sites when spraying pesticides for control of gypsy moths and other pests.

Protection Status:

There are no known conservation lands in the focus area.

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (on the order of 20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

Note: **State Ranks** are determined by the Maine Natural Areas Program.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (on the order of 20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

Note: **Global Ranks** are determined by The Nature Conservancy.

STATE LEGAL STATUS FOR PLANTS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's endangered and threatened plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future, or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

Visit our web site for more information on rare, threatened and endangered species!
http://www.state.me.us/doc/nrimc/mnap/factsheets/mnapfact.htm